

SPORTS



Farewell to Sarajevo—Calgary ahoy!

ICE HOCKEY: SOVIET UNION WINS THROUGH

The USSR has sealed the ice-hockey Olympic title by defeating Czechoslovakia 2-0, their sixth such award to date.

We are happy to be coming home with the top Sarajevo awards and to have lived up to the expectations of many millions of our fans, said USSR team head coach, Viktor Tikhonov.

Earlier, Sweden beat Canada 2-0 to finish third.

Triumph of the Olympic ideals

(Continued from page 1)

are gaining in appeal is also borne out by the fact that 17 countries have shared the Olympic awards a record of sorts.

Q: What was the upshot of the 97th IOC session held in the run-up to the Sarajevo Games?

A: The Sarajevo session, and this is very important, reaffirmed the cohesion of the International Olympic Committee and its readiness to jointly pursue the chief goal — to make the Olympic Games, both summer and winter, a model of friendship and cooperation among nations and young people the world over and to ensure that the Games further assert and spread the noble spirit of Olympism.

At the latest Sarajevo session, another four members were added to our Olympic family: the Olympic committees of Sudan, Ruanda, Samoa, and the Solomon Islands were unanimously elected in bringing IOC membership up to 153 nations.

Also important was the decision to extend the duration of the Winter Olympics to 16 days, a rule which is to go into effect already at Calgary.

In conclusion the IOC president spoke highly of the Soviet Union's contribution to the advancement of the international Olympic movement, and specifically, to the implementation of the "Olympic solidarity" programme.

PODIUM

Cross-country skiing. Women's 20 km

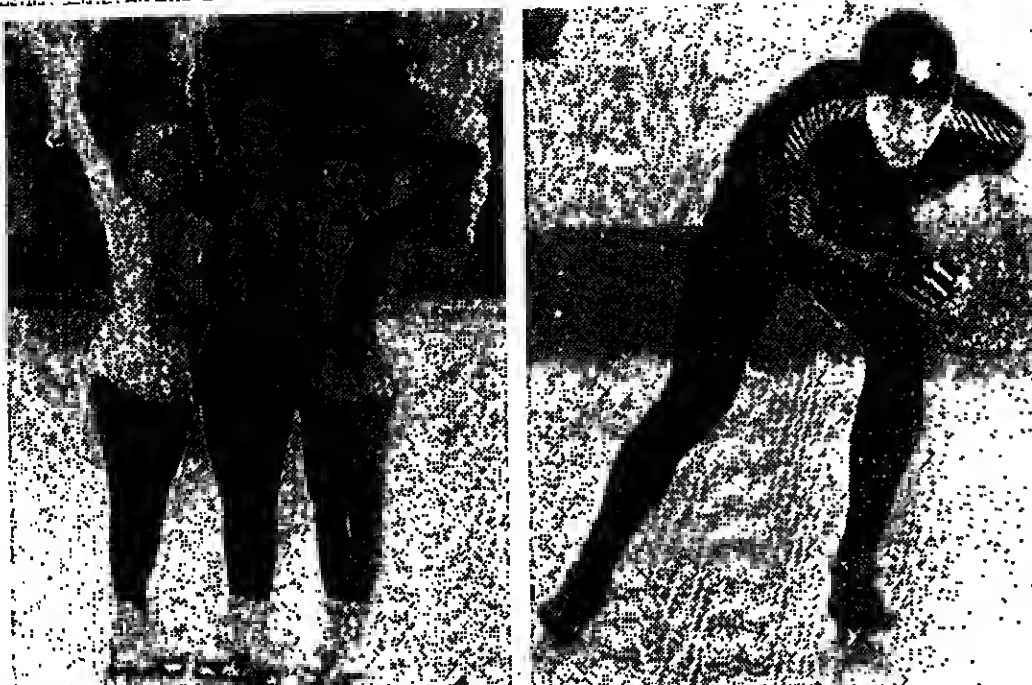
1. Marja-Liisa Rämö (Finland) — 1 hr 01 min 45.0 sec
2. Raisa Smolagina (USSR) — 1.02.26.7
3. Anni Jöhrén (Norway) — 1.03.13.6

Speedskating. Men's 10,000 m

1. Igor Malkov (USSR) — 14 min 39.50 sec
2. Tomas Gustafsson (Sweden) — 14.38.95
3. Rene Schödtch (GDR) — 14.40.81

99 m ski-jumping

1. Matti Nykanen (Finland) — 231.2 points (116.0 m; 111 m)
2. Jens Weisaflog (GDR) — 213.7 (107.0; 107.5)
3. Pavel Ploc (Czechoslovakia) — 202.9 (103.5; 109.5)



Sharing the women's figure-skating slates award stand (left to right) are Rosalyn Sumners of the USA, Katerina Witt of the GDR, and Kira Ivanova of the USSR. ● Igor Malkov of the USSR bound for an Olympic title.



(Left to right) — Yuri Kashekarov, Dmitry Vostyev, Aigmanias Shalov and Sergei Butyga won the 4x7.5 km biathlon relay for the USSR.

HER BIRTHDAY PRESENT

Kira Ivanova has pleased the many Soviet figure-skating fans by becoming the first Soviet female skater to win an Olympic award. 1984 European winner Katerina Witt of the GDR, took the title, and Ivanova finished behind runner-up and world champion Rosalyn Sumners of the USA.

Ivanova, who trains under twice world champion Vladimir Kovalev, has given herself a

nice present for the 21st birthday due on February 22.

The USSR did fairly well in the Olympic figure skating, walking off with the biggest haul of the field, consisting of one gold, one silver and three bronze medals. Significantly, most of them were won by Olympic debutants — Yelena Velova and Olga Vasil'yeva, Larisa Selazayeva and Olga Makarova and Marina Klimova and Sergei Ponomarenko.

Getting even

19-year-old speedskater Igor Malkov (USSR) is the first Soviet skater ever to have won the 10,000 Olympic title. ...Striking past the finishing line, Igor straightened himself up, looked at the scoreboard, and said, with satisfaction, plus three. What do you mean? — he was asked when, having got his breath back, he skated up to a group of Soviet coaches. He explained: In the 5,000 m event, I lost to the champion, Swede Tomas Gustafsson, by a mere 0.02 sec and was furious. I then resolved I'd get even. He added smiling, and in the 10,000 m finished with a 0.05 sec edge on him — which means "plus three" in my favour.

The USSR speedskating side won six Sarajevo awards — two gold, three silver and one bronze, compared to two (a silver and a bronze) of four years ago at Lake Placid.

Medals for a start

This season has proved to be the most successful in the history of Soviet biathlon, a sport which was introduced to the USSR four years ago, said national squad head coach Reinhold Uppmeyer. Our Olympic debut brought bronze awards to Zinits Ekmanis, from Riga, and Vladimir Alexandrov, from Krasnoyarsk — and, what is more, our team was the youngest, he stressed.

Wolfgang Hoppe navigated a GDR four-man bob sled to victory, while their Soviet counterparts led by Janka Klipps finished in sixth place. A crew led by Zinits Ekmanis placed 12th.

SENSATION IN ALPINE SKIING

The Soviet Alpine skiers proved no match for their counterparts at Sarajevo — they were literally not too steady on their feet. For example, in the slalom and giant slalom Vladimir Andreyev fell and then dropped out of the race, and he can draw little consolation from the fact that his late was shared by quite a few aces.

We are also not exactly overjoyed by Nailezhda Andriyeva's 14th and 20th places in the slalom and giant slalom or Vladimir Makeyev's and Valery Teygenov's 16th and 23rd positions respectively in the men's downhill (Soviet female skiers missed the event altogether).

On balance, the Olympic competition was nothing short of a sensation. For, one thing, the Americans, who had been doing poorly in this year's world cup, took three of the six events, and the illustrious alpine ace, Bode Miller of Switzerland, was not worth her salt, but most importantly nearly all the winners — Americans, Deborah Armstrong and Bill Johnson, Michele Figini along with Max Julen of Switzerland, and budding Italian Paola Margot, for Paolotta as they affectionately call her, are among the "new wives" in Alpine skiing — so the success of the brothers Phil and Steve Mahre of the USA in the men's slalom, proved to be the only ray of hope in an otherwise bleak outlook for the old timers.

A 'Golden bride

The "queen of the ski track" is the right way to describe Marja-Liisa Rämö of Finland. The 34-year-old physiotherapist, a coach from the small town of Suonenjoki, took the 20 km cross-country stride to win her third title.

The Sarajevo Olympic triumph from Suoni gave her a pension gift for her scheduled 10th March birthday. Her husband, also of the Finnish squad, landed two local Sarajevo.

Raisa Smolagina, 27, went all out for her second Olympic crown, crowned her overall performance.

The Soviet women defended themselves with a silver medal — after the "golden" performance of previous years, and both were won by team captain Smolagina.

We've taken to bringing in young stars, the USSR women's head Viktor Ivanov.

Ski-jumpers swap places

Well known Finnish ski jumper Matti Nykanen has won the 90 m, adding to his 1980 award in the 70 m. The next event is the 90 m, 1982 world champion. Right from the first jump his opponents have been out of the race, and he has won with a 116.0 m jump. He snagged gold in the GDR's Jens Weißflog triumphed in the 70 m.

LOGICAL SUCCESS

Norwegian Torbjørn Torgersen walked away with the Nordic combined crown, winning the 70 m ski jump and running up to 100 m. Torgersen, who was a Trelling him, won the Jousko Kalliolehti Vilpili.

Alexander Ponomarev, top Soviet skier, home sixth.



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KONSTANTIN CHERNENKO: We are ready for dialogue

We do not impose our outlook or social system on anyone. Nor are we after other people's land. The Soviet Union is sincere in proposing one road — a road of peaceful coexistence, a road of mutually advantageous cooperation, declared Konstantin Chernenko, the CPSU and the Soviet State leader during his meeting with workers at the Moscow Ship 1 Molot metallurgical works. At the same time, there are things which obviously do not depend on our good will, he said in politics we believe only in deeds, not in words. Reductions in armaments mean actual mutual reductions. Elimination of nuclear weapons means actual elimination of such weapons by both sides. If the United States and NATO agree to do this, we shall not keep them waiting.

The Soviet people are deeply convinced that peace can be preserved, Chernenko continued. We see the tide of events from confrontation to dialogue.

(Continued on page 2)



During the talks.

POLITBUREAU WEEKLY MEETING

At its regular weekly meeting the Politbureau of the CPSU Central Committee examined the results of the All-Union Communist Party congress held on April 21, 1984 in which more than 17 million people took part.

The Politbureau approved the outcome of talks between Konstantin Chernenko, Andrei Gromyko and Marco Kovalev, President of the Finnish Republic. The special significance of the Soviet Union attaches to strengthening its friendly and neighbourly relations with Finland and to the further deep-

(Continued on page 3)

SOVIET INDUSTRY IN THE FIRST QUARTER OF 1984

Industrial output grew by 4.9 per cent as compared with the same period for last year.

The quarter has seen much higher production rates for many critical products as follows: a 7 per cent increase in power generation, 9 per cent in gas, 11 per cent in metal-cutting machine tools, a 9 per cent increase in the production of colour TV sets and a 9 per cent increase in the production of large-size refrigerators.

Leonid Umanets, head of the department of statistical information of the USSR Central Statistical Board, commented on these and other figures contained in the Board's report, "On the results of the fulfilment of the USSR State Plan by industry in the 1st quarter of 1984".

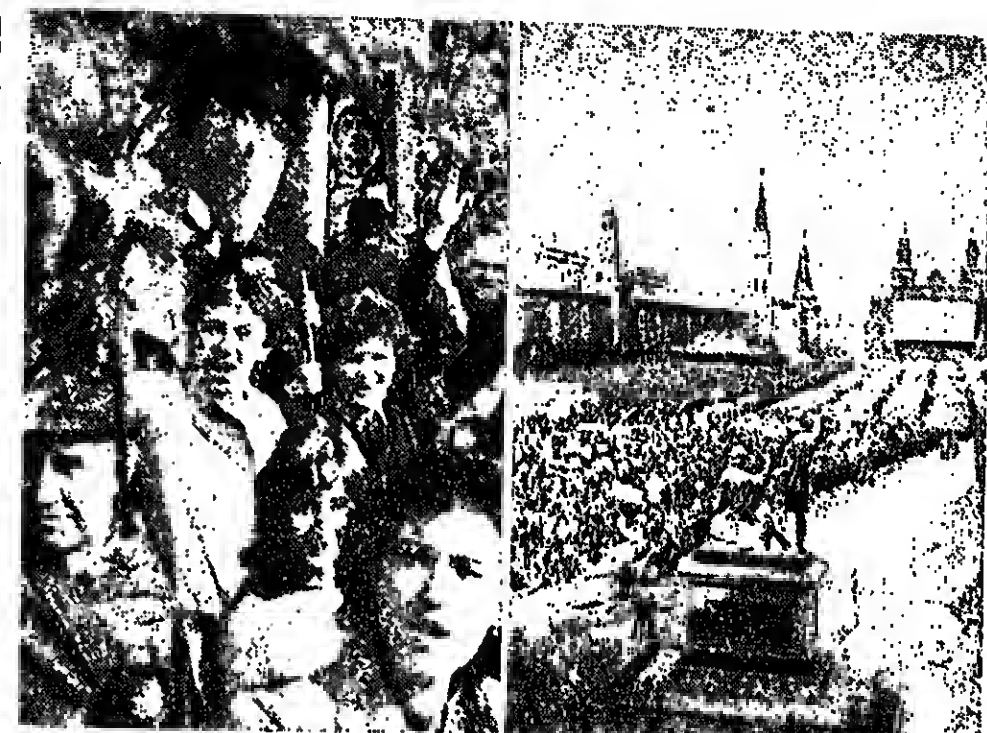
Especially high rates were registered in scientific and high-technology industries. For instance, production of numerically-controlled machine tools grew by 23 per cent; computers, by 13 per cent, and industrial robots, by 74 per cent.

Soviet industry is making rapid advances. And the current, fourth, year of the 11th five-year plan period (1981-84), has got off to a good start.

A critical factor is higher productivity, which accounted for 95 per cent of industrial growth in the first quarter. But it is above all advanced machinery that boosts productivity. And the latest technology is being introduced on an increasingly wider scale into Soviet factories. Some 1,500 automated and mechanized production lines and nearly 600 robots were installed in our factories in the first quarter.

This is a sizeable addition to the advanced machinery already in operation. Productivity may further be boosted through a more rapid introduction in all industries of advanced processes which raise productivity — in some cases dozens of times — and via the comprehensive mechanization and automation of production processes using robots and advanced electronic computers.

Our enhancing performance is a source of joy for Soviet people, for they well know that this growth will boost social programmes and raise their living standards.



All the Soviet people celebrated May Day, the day of international solidarity of the working people. May Day festive demonstrations were held in towns and villages throughout the country. The demonstrators carried banners inscribed with the following May Day Appeals from the CPSU Central Committee: "People of the entire planet! United broader the struggle against the aggressive forces of imperialism for the elimination of the threat of nuclear war! Demand a ban on nuclear, chemical, and other types of weapons of mass destruction! Let us curb the arms race and maintain peace and détente!" In the photos: During the festive demonstration in Red Square.

Photos by Boris Koufmann and Alexei Fyodorov

SOVIET-POLISH TALKS AT THE KREMLIN

Soviet-Polish talks have begun at the Kremlin. They are co-chaired by Konstantin Chernenko, General Secretary of the CPSU Central Committee and President of the Presidium of the USSR Supreme Soviet, and Wojciech Jaruzelski, First Secretary of the Politbureau of the CPSU Central Committee and Chairman of the Council of Ministers of the Polish People's Republic. The Soviet side is represented at the talks by Nikolai Tikhonov, Member of the Politbureau

of the CPSU Central Committee and Chairman of the Council of Ministers of the USSR, Andrei Gromyko, Member of the Politbureau of the CPSU Central Committee, First Vice-Chairman of the Council of Ministers and Minister of Foreign Affairs of the USSR, Dmitry Istinaov, Member of the Politbureau of the CPSU Central Committee and Minister of Defence of the USSR, and Konstantin Ruskov and Nikolai Ryzhkov, Secretaries of the CPSU Central Committee.

THE 'MOSCOW STARS' ARTS FESTIVAL



The Kuban Cossack Choir performing "A Ballad About Bread". Photo by Andrei Stepanov

The "Moscow Stars" 20th All-Union Arts Festival, has opened here with a performance of Moscow Musorgsky's musical drama "Khovanshchina" at the Bolshoi Theatre.

This festival, held annually between May 5 and 12, has a most varied programme. This year, the main emphasis will be on our multinational music. Taking part will be well-established names in the music world, for instance composer Otar Taktakishvili, singer Mari Slesheva, pianist Mikhail Pletnyov, and viola player Yuri Bashmet, as well as talented young performers. In keeping with tradition there will be a premiere during the festival — this year it is "La battaglia di Legnano", one of the least known, but finely performed operas by Verdi. It will be given at the Stanislavsky and Nemiro-

The Tsvetkov Boulevard circus will put on a new show called "On the Wings of Time", and the Venedsky circus — a performance called "The Carnival of Peace". Various exhibitions have been organized by Moscow museums and art galleries.

The festival will close on the evening of May 12 with a ballet performance at the Palace of Congresses in the Kremlin.

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Round the Soviet Union

● **SOVIET RESEARCHERS ARE CONTINUING TO STUDY THE UTILIZATION OF TIDES AND OTHER SOURCES OF OCEAN ENERGY. IT WAS NOTED AT A VLADIVOSTOK CONFERENCE ON OCEAN POWER RESOURCES.** Work has included studies of the chemical energy of rough seas.

● **MOSCOW'S LIBRARY FOR THE BLIND HAS MORE THAN 570,000 PUBLICATIONS IN BRAILLE AS WELL AS GROWING STOCKS OF BOOKS ON TAPE.** The All-Union Society for the Blind issues more than 300 works a year. In fiction, scientific and technical literature.

● **STUDIES UNDER UNESCO'S INTERNATIONAL PROGRAMME "MAN AND BIOSPHERE" HAVE BEGUN IN SEVEN NEWLY ESTABLISHED SOVIET NATURE PRESERVES.** One of them is situated 150 km outside Moscow, another is the Volga delta, yet another in the Soviet Central Asian Republic of Uzbekistan, and the rest in other parts of the country. Like the existing seven biosphere preserves in the USSR, the newly established ones are in localities where environmental pollution from local sources is ruled out. That is why the data obtained there make it possible to establish the character and degree of the impact of global factors of human activity on nature.

● **AN AIR LINK HAS BEEN ESTABLISHED BETWEEN THE DRIFTING STATIONS NORTH POLE-25 AND NORTH POLE-26 AND THE MAINLAND. PLANES ARE BRINGING ALL THE NECESSARY SUPPLIES FOR THE POLAR EXPLORERS AT NP-26.** A new relay of winterers are being taken to the station. As to the NP-25, it has already carried out its scientific programme and plans have been envisaged for its equipment. The latter station has no road at all since much of the ice has crumbled away during the years of drifting since May, 1961.



ARKHANGELSK NAVIGATION SCHOOL

The seaman's profession is one of the oldest in Russia. Ships flying the flag of the Soviet merchant marine have long been ploughing the seas and oceans: at present some 7,500 ships call at over 1,200 ports in 124 countries.

The seaman's trade is normally handed down from father to son, as a result entire dynasties of seafarers spring up, and this may be one of the reasons why the mastery and bravery of Soviet seamen are recognized throughout the world.

There are navigation schools in many Soviet ports, for instance in Leningrad, Riga, Kurch and Odessa, where skilled specialists are trained for the Soviet fleet. The oldest navigation school in the country—the V. Voznesenskiy Navigation School

in Arkhangelsk, a city in the north of the Soviet Union—celebrated its 200th anniversary in 1981. Every year hundreds of children from all over the USSR—the central areas of Russia, the Ukraine, Kazakhstan, Central Asia, the Ural and the Northern Caucasus—go to Arkhangelsk to learn to become seafarers.

All the cadets' disposal are engineering workshops, a training vessel, a gym, a first-class library, and a museum, where the prospective seafarers learn about the school's history and traditions. Meetings are also arranged for them with Soviet fleet veterans, Polar explorers and old school graduates.

In the photo: Teacher Vladimir Yuryev takes a class in the port equipment laboratory.

GENERAL-PURPOSE ROBOTS

A major step towards the development of flexible industrial systems has been achieved at the special technological equipment factory in Khar'kov, the Ukraine, with the manufacture of its first batch of general-purpose industrial robots which can be used with stamps and presses, as well

as lathes, milling and boring machine tools and small processing centres.

Only minutes are required to reprogramme such robots to perform any operations. All of them are provided with electronic consoles with expanded functional capabilities. Each console

can control more than one robot at a time, an essential feature for such units. Moreover, it controls production equipment as well, synchronizing its operation with the movement of manipulators, which supply workpieces and deliver ready parts to required locations.

FIFTH TRANSCONTINENTAL PIPELINE FINISHED

The Soviet Union has completed the laying of the fifth transcontinental pipeline since the beginning of the present five-year plan (1981-85). The 3,000 kilometre-long pipeline—Urengi—Center-1 links Western Siberia's largest gas field with the city of Yekaterinburg in the European part of the country.

The pipeline is built of pipe 1,420 millimetres in diameter. The operating pressure will be 75 atmospheres. More than 60 kilometres of the pipeline have already been tested for strength and air tightness.

The laying operation has completed three months ahead of schedule. Work on the Urengi—Center-1 pipeline began in summer and construction workers developed an even higher pace of work than during the construction of the Siberia—Western Europe pipeline.

The construction of the fifth transcontinental pipeline Urengi—Center-2, the last among the pipelines to be built in the current five-year plan period (1981-85), is going full ahead. About 800 kilometres of pipe have already been welded together and the pipeline which is being laid with Urengi—Center-2.

Four pipelines are in use, pumping Siberian gas to the users. The total length of the pipelines will be about 20,000 kilometres. They will handle the entire amount of gas produced in Western Siberia over the 10 years, and the output is to grow by 200,000 million cubic metres of gas.

New uses of mineral

A deposit in Yakutia has been producing vermiculite, a valuable raw material for the construction industry. Its excellent heat insulation properties are especially important for the Ekimovskaya, in Tomsk, a town on the Aldan River, beneficiaries of the facilities have been built to process the mineral.

Vermiculite has other uses as well. It is used, for example, to make fireproof cables, to protect, or as a filler for light types of concrete used in the construction of houses in the North.

Inventions as being the property of the whole nation, and that they should be made available to all organizations. The inventor's rights were defined and a basically new form of protection—the inventor's certificate, introduced. By choosing this form of protection, the inventor voluntarily gives the state exclusive rights over his invention. In return, the certificate ensures him protection of inventor's rights, including both material and moral benefits. The combination of personal and public interest, and the gearing of the inventor's work to the needs of society has meant that our inventors have been able to play direct part in solving a wide social task—the conversion of the USSR from an industrially backward country into a powerful industrial nation.

In the period between 1912 and 1917, i.e. in over 105 years only 96,078 inventions were patented, with foreigners being responsible for 82 per cent of these inventions, the magazine notes. Whereas, over the past two years alone, more than 126 thousand inventions have been entered in the USSR State Register.

MARSHLAND TO BE PROTECTED

NAUKA I ZHIZN' writes about a new reserve in Latvia, a Soviet Baltic republic. The reserve is called "enauval" because it occupies a marshy area of 18,000 hectares which is 9.5 metres deep. As a habitat for many species of birds included in the Red Book of Latvia and the USSR.

The ecological system of marshes, typical for the Eastern Baltic area, will remain intact in the reserve, thus saving some species of birds living in the marshes from extinction and extermination.

Another fact is also important and that is that the reserve will become a place for research, which will help scientists understand better the role and importance of marshes as an efficient part of the whole ecological system of the North.

Places to visit

PETER THE GREAT'S HOUSE IN LENINGRAD

It was at the beginning of the 18th century that the Petrovskaya, Leningrad's first embankment, was built. However, today little remains of it apart from Peter the Great's wooden house, the oldest building in the city. The house, built from logs, was completed in May, 1703 and two days later the tsar moved into it to a salvo of gunfire.

It is rather small: only 60 square metres in the consisting like other Russian log houses of two rooms divided by a passage. Linen hangs on the walls, and the door and window frames are decorated. While three-paned windows are cut through the walls which are painted to resemble brick.

In 1975, the house was surrounded by an iron railing and a monument to Peter the Great was put up in front of it. In Soviet times the house has been restored, and in 1930 it was opened to the public.

In the photo: one of the rooms in Peter the Great's house.



Science and technology

MEDICINES OF TOMORROW

Research into the directed "transport" of curative preparations has taken off in a big way in our country, says I. Berezin, Corresponding Member of the USSR Academy of Sciences. His aim is to direct curative preparations selectively and accurately to the last stronghold of an illness—the cell of a certain organ or tissue. Of course, everyone knows that medicine "addresses", for example, to the heart, goes with the blood flow to all the other organs.

So the medicine has to be administered in larger quantities than actually required.

Medicine can be delivered to their destination by liposomes, micelles whose shell is formed from natural substances.

The use of such microcapsules opens up new prospects, particularly in the treatment of cardiovascular, infectious, oncological and endocrine diseases and various hereditary anomalies. It is with the use of strongly effective means that an extra barrier is put on the organism. For the first time in this country they have been used by Academician Yu. Chervov of the USSR Academy of Medical Sciences in the treatment of myocardial infarction. The experiments were conducted at the Research Centre of USSR Academy of Medical Sciences. At present, clinical tests are underway.

other ten different preparations are underway. This was the topic under discussion at the All-Union Medical Conference which was held in the Ukrainian capital, Kiev.

FIVE MONTHS INSIDE BIOS-3

Two young researchers, Nikolai Bugreyev and Sergei Alexeyev recently spent five months in a hermetically sealed complex called BIOS-3, in which certain conditions of life aboard a space station were simulated. The experiment was carried out at the Krasnoyarsk Institute of Biophysics, the Siberian Branch of the USSR Academy of Sciences. Thus, Konstantin Tolokovsky's idea that long space flights aboard craft with a closed cycle of the rotation of substances in an ecological system incorporating human beings are possible has received additional confirmation.

Though the young researchers didn't take off from the earth and experienced no overload or zero gravitation as, for example, the crews of orbiting stations do, all other elements of their environment were similar to those in outer space. However, whereas present-day spacecraft use special filters and sophisticated regeneration systems to purify the air and water inside, in BIOS this was all done by plants which also provided food for the two researchers.

The "green" factory at BIOS included wheat and more than 10 different vegetables selected by the crew. Their garden occupied 60 square metres—enough to provide food to five people with oxygen.

Scientists believe that the BIOS system will be helpful both in outer space and on earth, whether in the mountains or desert, underground or underwater.

GLASS METAL

An installation for producing glass metal, a material which possesses a number of unusual properties including high strength and hardness, has been designed by scientists from the A. A. Baikov Institute of Metallurgy at the USSR Academy of Sciences.

The novel material possesses unusual strength and is less liable to corrosion than the usual metal. Its electromagnetic properties also changed.

In the specialists' opinion, the metal glass material is in for a great future, since our age, despite the rapid development of chemistry of polymers, remains the age of metal, and the demand for metal goods is constantly growing.

KODAR, THE HIGHEST POINT EAST OF LAKE BAIKAL

The highest mountain in the area of the Baikal-Amur Railway turned out to be 70 metres higher than was previously considered. A recent survey of the Kodar Range established its actual height at 3,073 metres.

The Kodar Range east of Lake Baikal stretches from the Mongolian border to the Pacific coast. Geologists say it is rising swiftly—15 millimetres every year. The first measurements taken in the late 1840s show it was 2,999 m high. But the range could not have grown by tens of metres. A mistake had been made due to imperfect survey, now corrected by aerial and space photography.

HIGH AWARDS FOR SEAMEN

Sixty-five crew members of the Soviet rescue tug "Vagrar", and "Bizon" have been awarded the medal of Friendship and for the Fulfillment of International Duty badges by the Vietnamese Government. They were also given the Freedom of the City of Ho Chi Minh.

The Soviet seamen received these high awards for towing a huge dock built by Soviet shipbuilders from the port of Khabarovsk in the USSR to the port of Ho Chi Minh. During the journey which took six months, they successfully negotiated storms, cyclones and hurricanes—strong gales.

Both small and oceangoing ships will be repaired at the dock which is intended for the Russian shipyards.

PLANETS NAMED

The Minor Planet Centre, Cambridge, Massachusetts, USA has informed the Institute of Theoretical Astronomy at the USSR Academy of Sciences of the naming of newly discovered celestial bodies.

The new minor planets discovered by N. Chernukha, senior researcher at the Crimean Astrophysical Observatory, will be named after: Academician Anatoly Alexandrov, the President of the USSR Academy of Sciences; the writers Alexander Grin, Vasily Shukshin, and Jack London; the astrophysicist Academician Viktor Sobolev, and the very imaginative Lithuanian artist and composer Nikolajus Ciurlionis.

ANCIENT CRAFTSMEN OF ARMENIA

Ancient stone monuments with elegant carving, and the remains of walls—proofs of the high-level skill of builders in old Armenia were discovered by archaeologists not far from Garni church—the well-known monument of national architecture. These rare finds were the result of recent investigations conducted by the archaeologists and art critics of Yerevan. This subject is dealt within a major book brought out by the publishers of the republic's Academy of Sciences, illustrated with colour reproductions and photographs. For the first time it gave a full picture of architecture in ancient Armenia.

VIEWPOINT

MANUFACTURE OF AGRICULTURAL MACHINERY IN THE USSR

Alexander YEZHEVSKY, USSR Minister of Tractor and Agricultural Machinery

In 1903 some three million tractors and more than 700 thousand combine harvesters could be seen harvesting in our fields. Agricultural machinery marked "Made in USSR" is widely known abroad: it is bought by dozens of countries.

At the present time, the manufacture of tractors and agricultural machinery in the Soviet Union is experiencing a rebirth: 147 factories are under reconstruction and 19 new factories are being built. Collecting tractors and combine harvesters and state farms are receiving tractors and combine harvesters, while they have managed to update all their existing machinery. To practice this means that the amount of energy available for the job has increased threefold since 1963. Today we are out to double this level over a considerably shorter period.

However, though boasting the power of agricultural machinery is important, it is not sufficient on its own to achieve total mechanization of the farming industry. For this revolutionary machinery needs to be designed featuring higher operating reliability. Tractors should have a lifetime of 8 to 10 thousand hours as in the case today, and we need to achieve a 1.5- to twofold improvement in the future-free operation of farm machinery.

There are plans to manufacture 800 new models of considerably improved machines for progressive farming processes. This means that we need to halt the development cycle. Such is the essence of the reconstruction that is taking place today in the Soviet agricultural machinery industry. We can't count on more workers or experts. What we are out to achieve is to shorten the development cycle twofold with the same number of people employed.

The agricultural machinery industry and the USSR State Committee for Science and Technology have co-sponsored a number of measures aimed at enhancing research and development. To this end, special importance is attached to computer aided design. By 1990, 20 per cent of all research and development in the industry will be done by computer, this will increase the performance of design work by 30 to 40 per cent.

However, the drawing board is only the beginning of the development cycle. The design efforts have to be embodied in a prototype which then has to be tested and further streamlined. Here in this particular industry it is not easy to achieve quick results. For instance, harvester can be tested and altered as required fairly quickly, but one then has to wait for the next harvesting season to test the alterations.

This disadvantage can be overcome to a certain extent by supplementing field tests with simulation modelling. Russian engineers are especially successful in this, with work on their Don harvesters proceeding practically all the year round. In the near future we expect to double the number of such test systems.

However, our ultimate objective is full-scale production. In 1984 alone we plan to start manufacturing 123 new models of agricultural machinery.

FROM the SOVIET PRESS

DEVELOPING THE SEA SHELF

30 countries now produce oil and gas from the sea. The development of sea deposits is the subject of an article in IZVESTIYA written by S. Yudin, chief of Gidromorologoprom of the Ministry of the Gas Industry of the USSR.

The study and development of sea deposits in this country, he writes, is carried out according to a purpose-oriented comprehensive programme involving 30 organizations and 22 ministries and departments.

Azerbaijan is a pioneer of oil production at sea both nationally and internationally. At the present time the Caspian Sea provides two-thirds of Azerbaijan oil and over 90 per cent of its gas. A whole flotilla of drilling rigs are operating in the open sea. One technical novelty is the "Shal" semisubmersible drilling unit—a giant structure with a 58 m rig, equipped with complex lifting mechanisms, precision instruments and electronics.

Another achievement is the construction of deep-water stationary platforms used for drilling clusters of wells.

Quite recently the first stage of a special plant for manufacturing deep-water offshore platforms was put into operation in the Baku suburb of Korodop. It will have a total of five docks. Geophysical ships have also been built and equipped with highly advanced technology.

THE POSSIBILITIES OF HYDRAULICS

G. Bugreyev, director of the Gidrosloil plant in Kirovograd, talks about possibilities and prospects for the use of hydraulics in agriculture in the SELSKAYA ZHIZN' newspaper.

The Gidrosloil plant in Kirovograd is the Soviet



the photos: ● Spring moods. ● That's my favourite for all seasons. ● Waiting for a bite.

ENTERTAINMENT

Theatre, Cinema and TV Stars

LEV DUROV

Lev Durov, the famous actor and director at the Malye Bronnaya Theatre, in Moscow, has more than two hundred roles to his credit in theatre, cinema and television. His performance in the following films and plays made him particularly popular with audiences: "Strange Crown-Ups", "All the King's Men", and "Seventeen Flashes of Spring" (films); and "Don Juan", "Marriggo", and "Chelno" (plays).

How did you embark on your career in the arts?

First I would like to make it quite clear that though I am related to the famous Russian Durov circus family, my parents did not have anything to do with the arts. My father, an explosives engineer, blasted tunnels, and my mother is a historian.

It was only when I was on the point of leaving school, that I decided to apply for a place at drama college. I knew I had few chances of success: I hadn't done very well at school, while my appearance left something to be desired. I still consider it was by pure luck that I was accepted at the Moscow Art Theatre studio.

With what company did you start your stage career?

Upon graduating from the Moscow Art Theatre studio, I went to the Central Children's Theatre which was then one of the most popular companies in Moscow, both with children and grown-ups. Incidentally, it was here that I met Anatoly Fros for the first time, a director with whom I have worked over a number of years. I owe much of my success in acting and directing to Fros.

Working side by side with such a well-known director, wasn't it difficult to take the plunge and to start directing yourself?

It was precisely because of what I learnt during the 27 years that I worked with Anatoly Fros (in more than half of his productions I was either co-director or assistant) that I decided to branch out on my own. Every one of my productions receives qualified appraisal from Fros, which is taken into account in my subsequent work.

As an actor, do you prefer to wall for the "night" role to come along, or do you feel that it is more important to be kept constantly in work?

Perhaps, one should wait, but this goes against my character. I want to work, and the more the better. I'm happiest when I am engaged in permanent creative activity. It is true that in such a flux of work, there are few real successes. In the cinema, for example, I regard my performance as Pavel, in Larisa Shepitko's film "Pere-



well", based on Valentin Rasputin's novel, "Farewell to Mykola" as being my best work. All "play-acting" is absent in this interpretation; I manage to get through to the essence of the character. I do not know whether I will ever be able to act as well in the cinema again.

What is more important for you, theatre or cinema?

I began to work simultaneously in the theatre and in films immediately upon graduating from the Moscow Art Theatre studio. I certainly could not live without the cinema. I need it like I need the theatre. Both are part of my life.

Tell us, please, about your plans for the immediate future.

As regards the cinema, I have recently been filmed in a movie version of the fairy tale, "Pipit Longstocking". I play the role of circus director. In the theatre, I am finishing work on a production of "Cinderella". I believe it is the most beautiful fairy tale of them all. And I am also beginning to rehearse for "Forest" by Alexander Ostrovsky. I have dreamt for a long time of this play. I appear in two capacities in the production: as director and actor. I will play Arkashka.

Mikhail BARANOV

GUEST PERFORMANCES IN MAY

A two-month music marathon, the International "Melodies of Friends" variety programme, was rounded off by performances in Moscow. Taking part were award winners from Bulgaria, Hungary, Vietnam, the GDR, Poland, Czechoslovakia and other nations, who had performed in Tbilisi, Kiev, Baku, Odessa, Kishinev and Kharkov.

The festival opened this May's guest performance bill-board on which are featured famous names in the arts from over 20 European, Asian and Latin American states.

Karel Gott, holder of several "Golden Lyra", a Czechoslovakian award presented to the most popular singer, will be back again in the Soviet Union.

Also here on tour will be the Dusseldorf drama theatre, from West Germany, and a Japanese

electric guitar ensemble, puppet theatre from...

Among the Soviet...

Dance Ensemble of...

led by Igor Molye...

just arrived in Mos...

Beryozka Dance En...

will tour Central A...

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BUSINESS

CONTROL DATA CORPORATION: INTEREST IN SOVIET TECHNOLOGY

A delegation of Control Data Corporation (CDC) held talks in Moscow with representatives of VVO Leningrad on the possibility of buying new Soviet technology. An MINI correspondent was told by Robert D. Schmidt, head of this American delegation who is also the Chairman of the Board and Chief Executive Officer of CDC, a CDC subsidiary. Simultaneously a meeting was organized in the Moscow office of the US-Soviet Trade Economic Council with Soviet agricultural specialists who saw in person the new system Jeniponics enabling a year-round growing of quality vegetables in a controlled medium.

This system may be used with success in regions with rigorous climate. Robert Schmidt stressed, in particular in the Soviet Far North. CDC established its first business contacts with the Soviet Union some 20 years ago. The first delivery was made in 1968 and included equipment for the Joint Institute for Nuclear Research in Dubna. The greatest flourishing of trade ties was in the 70s, the period of détente. The corporation maintains close business links with the USSR Academy of Sciences, the Hydrometeorological Centre, the Ministry of Geology and other organizations. We have our permanent office in Moscow.

Lately, he emphasized, we have developed such form of cooperation as the exchange of technology. Being a Leningrad mediator in the Western market, Control Data actively sells Soviet licences both in the USA and in many other countries; more specifically, licences were bought involving processes for crushing rock, titanium plating of equipment, etc. Our relations could develop still more actively, Schmidt noted, were it not for various political obstacles. For instance, because we were denied for some reason an export licence for deliveries to the USSR, the corporation lost 250 million dollars. Trade should be free of political differences.

Contacts and contracts

A regular meeting in Moscow of the Intergovernmental Soviet-Mongolian commission on economic and scientific-technical cooperation considered a wide range of problems dealing with the development of Soviet-Mongolian business relations and raising their efficiency. Special attention was paid to bilateral agreements on economic and technical cooperation for 1981-85.

In Belgrade, a regular meeting of the Intergovernmental commission of CMEA member-countries on coordinating cooperation in the manufacture of atomic power equipment took place. The meeting studied the obligations undertaken by the member-countries of the intergovernmental agreement of June 28, 1979, on manufacturing and supplying atomic power equipment. Specific measures were planned to provide for equipment supplies in 1984. It has been noted that the volume of mutual deliveries will increase in the current year by 12 per cent as opposed to 1983.

MACHINE-TOOL BUILDERS COOPERATE

For 20 years now KUKA Schweissanlagen-+Roboter GmbH has maintained fruitful business links with Soviet partners, president of this West German firm Burkhard Wollschlaeger told so MINI correspondents. We are executing large deliveries of equipment for Soviet motor plants VAZ in Togliatti, KomAZ in the town of Brezhnev, ZIL, AZLK, etc. In its turn our firm exports lathes from the USSR.

Together with mutual deliveries of machines and equipment, production cooperation grows, too. Thus, at the Moscow show Metallprom-84 we showed an interesting lathe, created as a result of successful cooperation of Soviet and German specialists. This machine consists of a lathe produced by the Serbo Ordzhonikidze machine-building plant in Moscow and a robot of our design, which in the process of machining parts also performs holding and control-measuring functions.

The interests of KUKA in the Soviet market are represented by the Austrian trading firm GWEG GmbH, which gives us big practical help in expanding links with Soviet partners. In 1982 we concluded with the USSR a long-term agreement on cooperation in the field of textile production systems, and we conducted a constant exchange of specialists and organized joint seminars and symposia. Thus, for instance, a symposium was held at the Moscow AZLK plant on the auto-making and machine-building industry, which gave useful exchange of opinions. We hope that in the future our cooperation will bring still more good fruits, he pointed out.

Ernest POLIVANOV

Austrian firm expands range of goods

The agreement on scientific and technical cooperation between the USSR State Committee for Science and Technology and the Austrian firm Rheinhold Chemie, has been expanded for a further five years.

The firm is one of the biggest chemical enterprises in Austria to specialize in the production of synthetic resins, ether and polyurethane lacquers and various

SOVIET RAIL IN 1984

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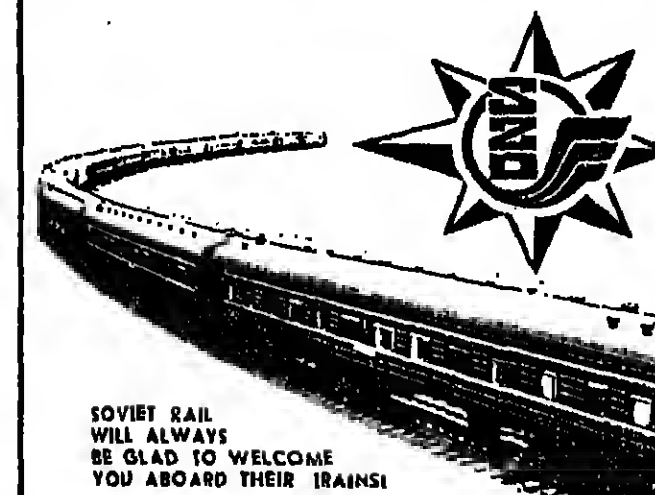
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SOVIET RAILWAYS

RESULTS OF RADUGA FOLK ART TV FESTIVAL SUMMED UP

An Argentine TV programme won the most prize at the 5th Raduga International festival of TV folk art programmes, held in Moscow.

Argentina was taking part in the festival for the first time. Other debutants were TV companies from Bangladesh, Guinea, Libya, Mozambique, the Philippines and Nigeria. Altogether 39 countries participated, as compared with 17 in the 1st festival (1975).

As in previous years the festival was held in two stages.



An exhibition of folk art from Tajikistan, one of the constituent republics in Central Asia, continues at the Central Artists Club in Moscow. There are two works from the exhibition — a sculptural portrait of actress L. Zakhidova by A. Gantsev, and a landscape, "The Nurk S-s" by I. Voznyak.

First, the TV programmes submitted were shown to an international jury of directors, producers and art critics chaired by Igor Moliseyev, head of the well-known Folk Dance Ensemble of the USSR. The review of the programmes developed into serious, profound discussions: what is folk art today, what can TV do to preserve this precious cultural heritage? The jury awarded its prize to two programmes: "The traditional dances of Alsace" (France) and "The art of throat singing" (Mongolia).

The title of the Main Prize, instituted by the festival's patron, the USSR State Committee for Television and Radio

Broadcasting, was determined at the second stage. For ten months, the competition programmes were shown on the USSR Control TV network. Thousands of viewers, who submitted their opinions on them, thus became members of a vast and admittedly highly authoritative jury. Each letter expressed genuine interest in the fate of folk art.

Apart from the Main Prize, special awards were also presented to folk programmes from Sweden, Egypt, Vietnam, Nicaragua, Yugoslavia, as well as from the USSR.

The 6th International Raduga festival of television folk art programmes will begin in 1985



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